



farmers for
climate action

A Survey of Australian Agricultural Perspectives on a Path to Net Zero

Wherever we are in this country, we acknowledge Aboriginal and Torres Strait Islander peoples as the first inhabitants and the traditional custodians of the lands where we live, learn and work. We pay our respects to the Elders past and present, for they hold the memories, the traditions and culture.

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EXECUTIVE SUMMARY

Australian farmers are already feeling the effects of climate change. We know that climate change poses a serious and ongoing risk to the agriculture sector's viability, which impacts our long-term food security and the sustainability of regional communities.

As recently as March 2023, with our *Farming Forever* report, Farmers for Climate Action called for a cohesive national plan to mitigate the negative impacts of climate change on agriculture and build resilience across the industry. Our farmers called for this plan to ensure that all farmers can benefit from the shift to a low emissions economy.

In July, the Australian Government announced the first National Statement on Climate Change and Agriculture, agreed to by the nation's Agriculture Ministers. The statement acknowledged our sector's leading role in providing solutions to climate change.

In November, the Government released a discussion paper on their upcoming Net Zero Plan for Agriculture and Land, the first of six sectoral plans across the economy as Australia develops its roadmap to net zero by 2050. Decarbonisation of all sectors is essential for agriculture's future, and our ability to produce food and fibre with a safe and predictable climate.

The release of the discussion paper coincided with a peak period for agriculture, prompting concerns among our members regarding their capacity to effectively participate in the Government's six-week consultation process.

We believe it is absolutely crucial that farmer views are central to the Net Zero Sector Plan that is being developed for Agriculture and Land. So we launched a survey across our network of farmers and, importantly, across the wider industry, to help farmers and those working across agriculture's value chain, to have their say.

This report elevates the voices of just over 700 farmers and those working across the industry who took part in our survey. Their voices will be critical in ensuring that the Government's plan protects Australian farmers' ability to be profitable, productive and sustainable.

Importantly, this survey sample largely reflects Australian agriculture with the percentage split of businesses across states and territories and commodity groups reflecting the latest Australian Bureau of Statistics agricultural commodities data.

I am in awe of the thoughtful responses we have received through this process and the insights shared with us.

There is no doubting the impact that climate change is already having on the sector. 92% of farmers responding to the survey have experienced changes in seasonal conditions and climate-related on-farm impacts in the past three years.

We have more evidence that farmers are already leading the way on the road to net zero, with 71% already investing in emissions reduction measures on farm. And they're telling us they want to do more, with 64% planning to invest in future or additional emissions reduction measures in the next five years.

There are three clear barriers facing farmers in reducing emissions on farm:

1. An absence of clear government policies or incentives for sustainable practices - which tells us how crucial it is to get this Plan right.
2. High upfront costs and limited access to capital for investing in new technology - solutions such as instant asset write off for capital investments that aid producers to reduce emissions, or tax incentives for multi-peril insurance products to allow farmers to remove a portion of risk from their business to then invest in reducing their emissions footprint, would be welcomed by farmers. There is an exciting role here for governments and financial leaders to work together to create new ways to support farmers' uptake of new emissions reduction technologies.
3. Challenges in measuring and validating changes in emissions or carbon capture - this uncertainty validates that we need more investment in research and development and extension. Farmers need to trust that what they're investing in will work and they need to know that the methodology they're using to measure it is right.

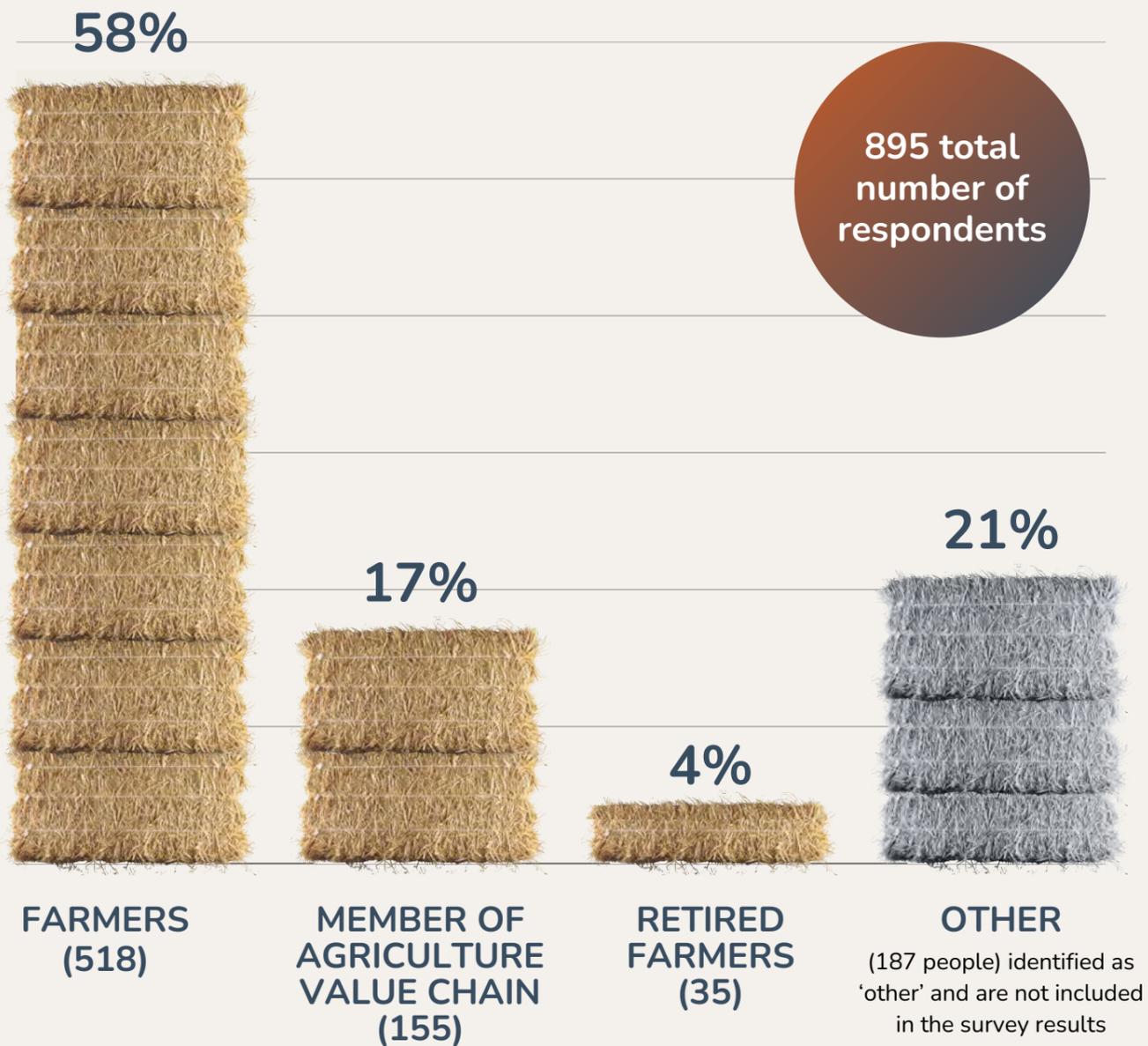
I encourage you to get into the detail of the solutions and ideas from farmers and the industry in this report - this is how Australia can be world-leaders in climate smart agriculture on the road to net zero.

Thank you to everyone who took part in the snap consultation period. If you didn't get a chance, we have relaunched an ongoing survey to ensure farmer views can continue to be heard throughout 2024 as the government develops its Net Zero Sector Plan for Agriculture and Land.



Natalie Collard
CEO, Farmers for Climate Action

WHO?



708 full submissions

Shared with more than 60 farming and agriculture groups across Australia

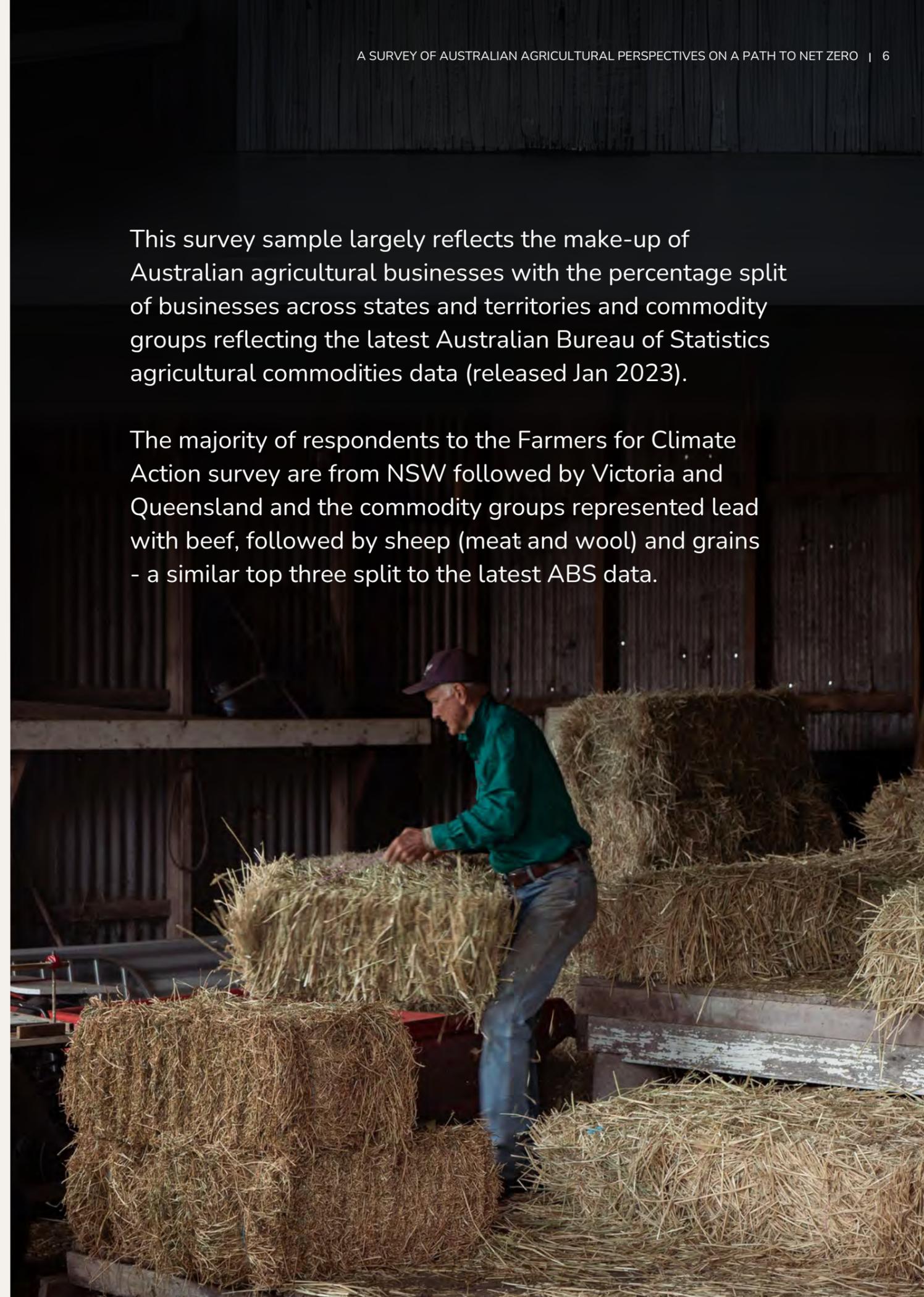
Farm size: Ranging from 1 to 430,000 hectares

Employed how many people in the last year:

Ranging from 0 to 420, with a median of 1

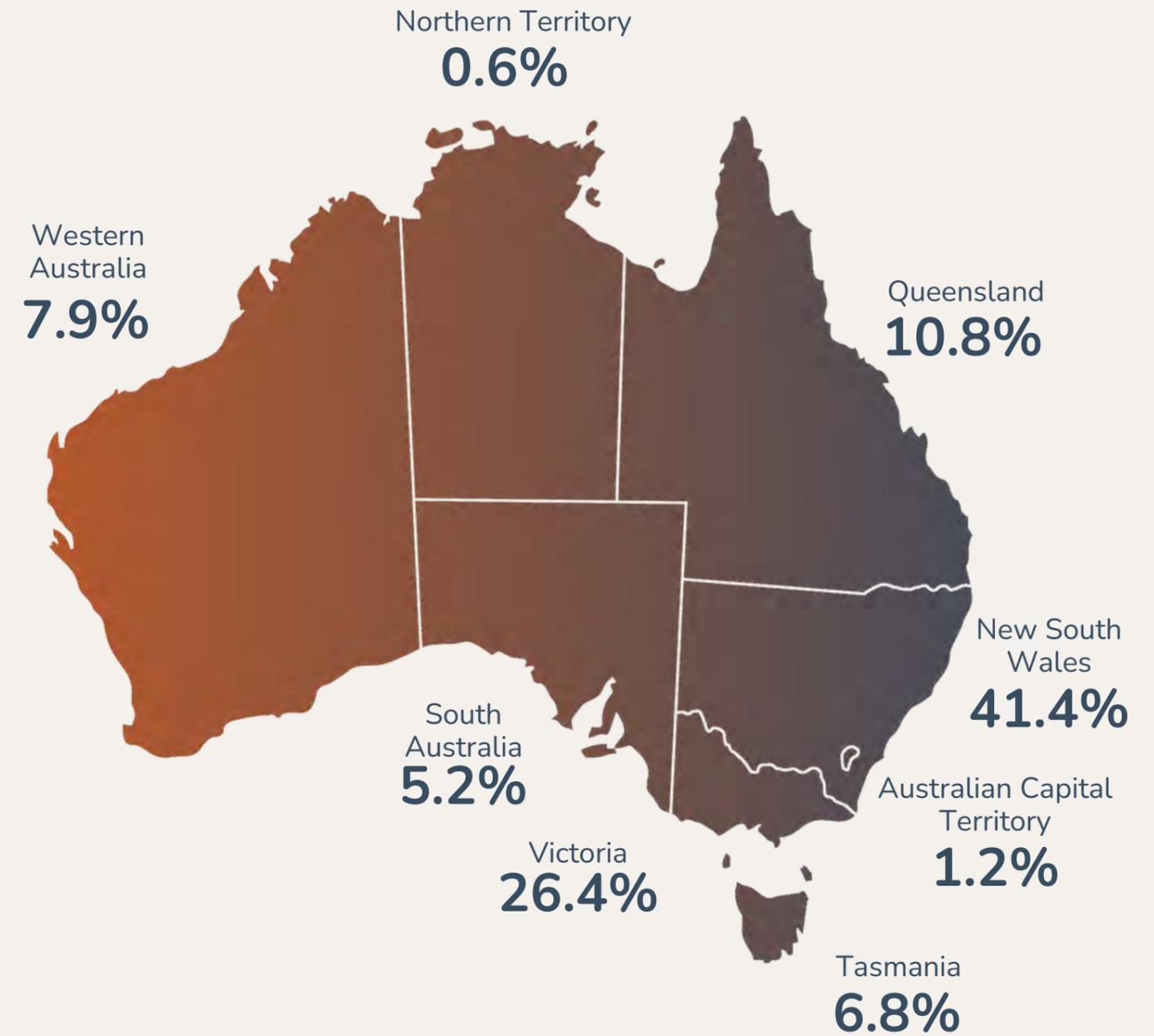
This survey sample largely reflects the make-up of Australian agricultural businesses with the percentage split of businesses across states and territories and commodity groups reflecting the latest Australian Bureau of Statistics agricultural commodities data (released Jan 2023).

The majority of respondents to the Farmers for Climate Action survey are from NSW followed by Victoria and Queensland and the commodity groups represented lead with beef, followed by sheep (meat and wool) and grains - a similar top three split to the latest ABS data.

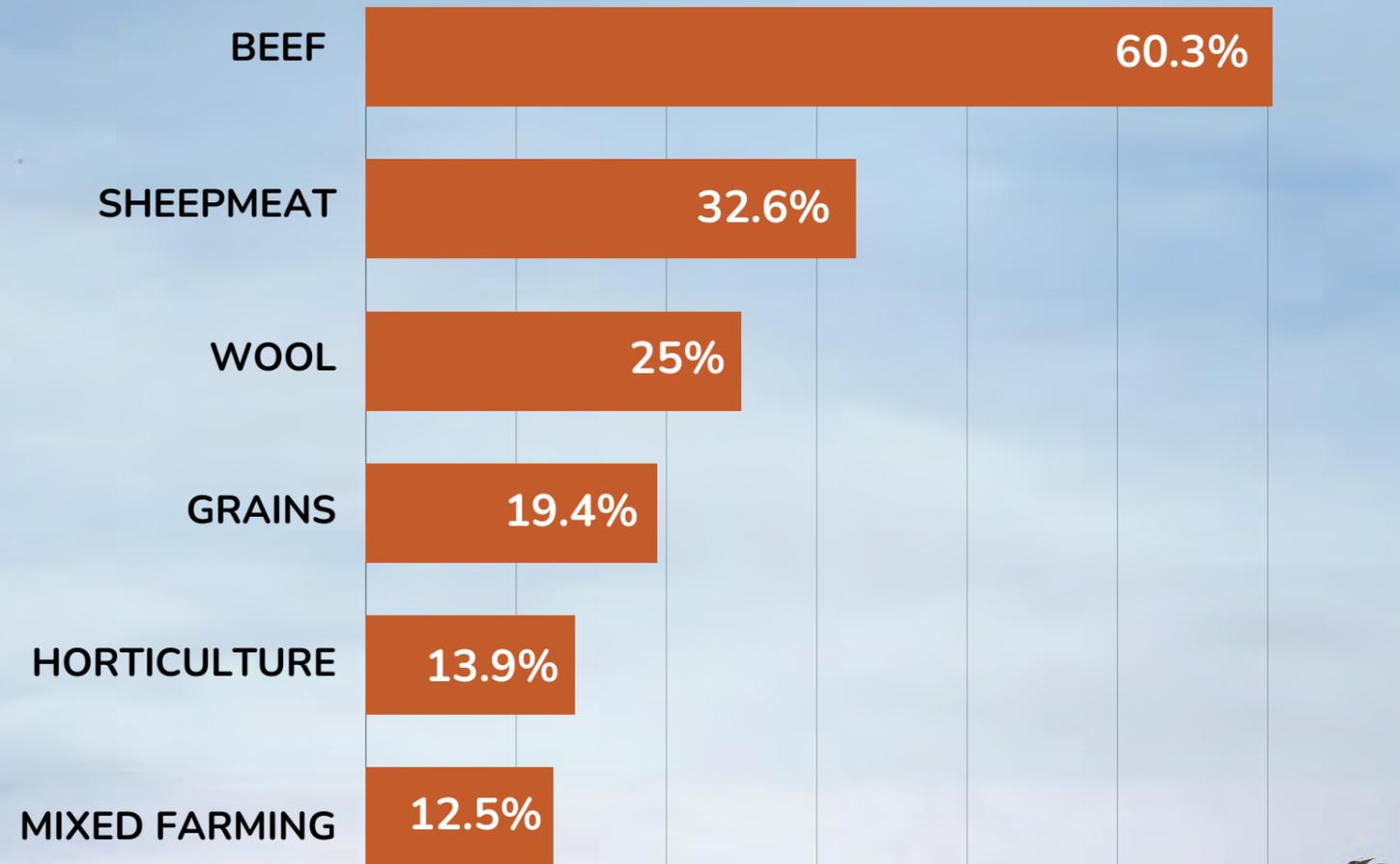




LOCATION



WHAT DO THEY FARM?

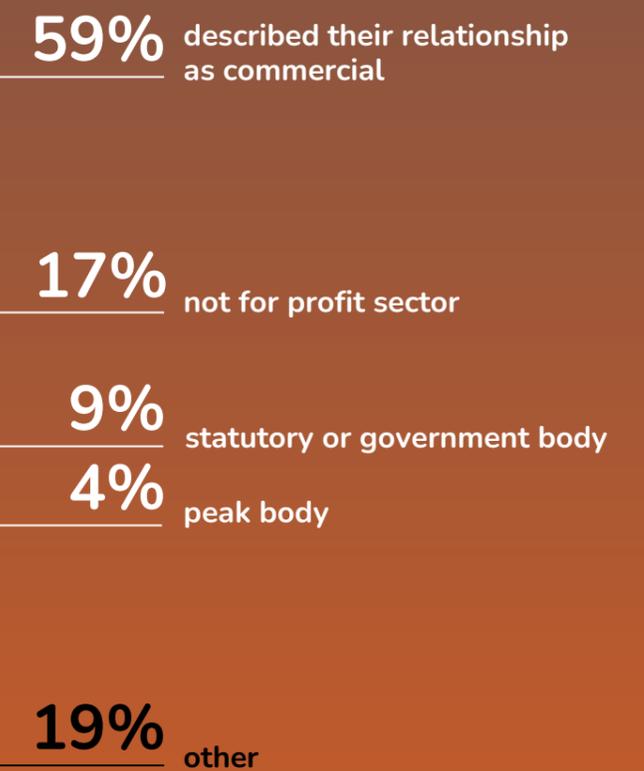


see appendix for full results



PEOPLE WORKING ACROSS THE AGRICULTURE VALUE CHAIN

Of the 155 respondents who identified as working in the agriculture industry:





AUSTRALIAN AGRICULTURE AND CLIMATE CHANGE IN 2023

Climate change is viewed as the single greatest threat to the future of farming in Australia (55%)

... followed by increasing bureaucracy and red tape (15%).

Just 1% of respondents selected transmission lines and 1% the rollout of renewables in answer to the same question.



92% of farmers have experienced changes in seasonal conditions and climate-related on-farm impacts in the past three years

64%
have experienced unusual rainfall

53%
unpredictable growing seasons

51%
storms

47%
flooding

39%
drought

30%
heatwaves

22%
increase in pests and diseases

18%
bushfires

89% described these events as very unusual or somewhat unusual

FARMERS ARE LEADING THE WAY ON THE ROAD TO NET ZERO



71% of farmers have already invested in emissions reduction measures on farm, such as installing solar on farm infrastructure, electrifying farm equipment, implementing regenerative practices such as low till cropping, planting trees, restoring and revegetating landscapes, protecting waterways and investing in soil carbon sequestration projects.

“We are transitioning to 100% electric equipment and appliances. It's relatively easy for smaller tools but remains difficult for utility vehicles, ATVs etc.”



“We have seen an ongoing reduction in fuel costs for machinery and a reduction in chemical use requirements. We have trialled some additives to cattle water aimed at improving gut health with a more efficient use of foods and apparently a reduction in cattle methane emissions (we cannot monitor this). Large areas have been fertilised with manures reducing synthetic fertiliser usage.”



64% plan to invest in future or additional emissions reduction measures in the next five years.



“We've regenerated pastures, planted trees lots, and fenced off creeks. Benefits include protected creeks, reduced erosion, excellent ground cover all year round, better beef production - steers to market time reduced.”

“All vehicles will go fully electric as they become available, including farm bikes and quads. Hot water systems on all houses are in the process of being replaced with heat pump systems. The reason for acting is to pass on a planet that is livable to the generations to come, it also has a financial benefit to our business by lowering our costs with energy and fuel bills.”



“I'm keen to use a methane reducing feed supplement when one becomes available. Unless we deal with methane we're just playing around.”



“We'll install more solar power and we're looking for alternatives to diesel powered farm machinery. Everyone needs to do what they can to work towards net zero.”

RESPONDENTS IDENTIFIED TWO CLEAR OPPORTUNITIES FOR AUSTRALIA'S AGRICULTURE SECTOR IN PURSUING NET ZERO EMISSIONS:

52% said the chance to reduce future climate risks

50% said more certainty for future farming generations

And three clear barriers when looking to reduce emissions and build carbon stores on farm:

1.

An absence of clear government policies or incentives for sustainable practices (60%)

"We need bipartisan policies to end the start/stop/reverse mayhem inflicted on us by short term political advantage-seeking."

"Create a stable environment politically and financially for farmers to have the security to invest and trial new systems in their businesses."

2.

High upfront costs and limited access to capital for investing in new technology (56%)

"I don't know what the economic benefit will be and cash flow is tight."

"At the moment markets and consumers aren't prepared to pay the increased cost of food production, so it means that the farmer will have to absorb the cost and reduce their margins/profits even further. There is a commercial value for carbon, and it is wrong to expect agriculture to do the heavy lifting without financial support."

3.

Challenges in measuring and validating changes in emissions or carbon capture (54%)

"We need to create an environment that removes the fear of failure and offers farmers the tools to accurately and easily assess the main on-farm sources of emissions so that they can apply their experience and knowledge to create practical solutions that reduce emissions and grow productivity."

WHEN ASKED WHAT THEY THOUGHT WOULD BE MOST DIFFICULT IN PURSUING NET ZERO EMISSIONS IN AGRICULTURE:



48%

Said financial restrictions, closely followed by

47%

A lack of knowledge, expertise or trusted advice to implement emissions reduction strategies on farm

“Government led programs need to be funded, farmers cannot keep paying for changes while other sectors continue to emit high levels of carbon.”

“We don’t have the time to leave the farm for learning courses. Few farmers can rationalise the time to focus on adapting. They are just plain tired and many are getting too old. We need younger farmers urgently.”



**PRACTICALLY
SPEAKING...**

“We are not interested in greenwash and want tangible results.”

When asked to consider the best ways to reduce emissions and build carbon stores on farms, respondents identified the following:

- 65%** Promoting biodiversity with mixed-species pastures and agroforestry systems
- 60%** Rehabilitating degraded land and reforesting areas not suited for agriculture
- 57%** Implementing rotational grazing to enhance pasture health and carbon uptake
- 53%** Switching to renewable energy sources, like solar and wind, for farming operations

Two clear tactics emerged when respondents were asked to think about what would help them reduce emissions on their own farm or ag business:

- 72%** Enhancing soil carbon sequestration
- 61%** Using renewable energy sources on farms

WHAT SHOULD THE AUSTRALIAN GOVERNMENT FOCUS ON?

“The government needs to understand that modern on farm technologies are expensive to set up but worth every penny over time. Landowners need help so they can move more quickly to install on farm technology that already exists.”

“We need to create a ‘safe’ environment for farmers to trial and adopt new practices without risk of failure.”

We asked farmers to share in their own words, which emissions reduction technologies the government should focus on supporting.

1.

Renewables and electrification

More than any other technology, respondents highlighted the need to shift Australia to renewable energy sources and stop using energy derived from fossil fuels. The role landholders can play in hosting large-scale renewable projects such as solar and wind farms was referenced.

Respondents also called for investment in on-farm battery technologies to store renewable energy for the home and farm, and the electrification of farm equipment, including vehicles.

“Electrify everything - start with helping farmers find and install good solar pumps - immediate win in less fossil fuel usage and \$\$\$ savings. Smart devices controlling water will save a lot too. But farmers need to know what's out there and how it can help them.”

“The reduction of fossil fuels should be a priority. We need investment in electric farm vehicles and machinery. If it's not easy, farmers won't use it. Farmers make decisions based on making money over the short term and they like systems that are easy to manage and understand.”

2.

Fuel alternatives

Respondents want the government to focus on technologies to support alternative fuel supplies such as hydrogen and biofuels for hard to electrify farm machinery applications and the transportation of products produced on farm to market.

“Find a way to power farm machinery with renewable fuel sources such as hydrogen.”

“We need to develop sustainable biofuels which have minimal emissions to reduce carbon imprint associated with farming management.”

3.

Soil health and carbon sequestration

Many respondents highlighted the importance of soil health and the role of soil carbon sequestration on the road to net zero. Farmers want the government to focus on technologies that enhance soil carbon sequestration and a trusted methodology to assess and monitor carbon in their soils.

“How much soil carbon can we actually sequester - there are plenty of soil carbon ‘gurus’ around who promise much but can they actually deliver?”

“We need soil carbon sequestration [technologies] that are compatible with productivity.”



WE THEN ASKED WHICH ON-FARM EMISSIONS REDUCTION PRACTICES RESPONDENTS THINK THE GOVERNMENT SHOULD FOCUS ON SUPPORTING

1.

Generating renewable energy and finding storage solutions on farm

The majority of respondents cited the production of renewable energy on farm and supporting farmers to store excess energy on site as a low hanging fruit that should be supported by the government. Many responses specifically referenced solar solutions.

“Getting as many farming practices off fossil fuel reliance as possible. Individual farmers could be energy producers - why does renewable energy always have to be large scale? Couldn't farmers really be encouraged to generate solar and wind?”

“Facilitate vehicle battery to farm operation. Farms will have a lot of EVs and more solar PV in future. Farmers should not be forced to invest in expensive stationary batteries when they will have many vehicle batteries.”

“Provide subsidies to farmers to transition/invest in farm based solar/wind power generation, batteries and electric farm machinery and become sustainable/off grid to reduce production overheads.”



2.

Carbon sequestration

A large number of respondents said the government should support the role agriculture can play in sequestering carbon in soil and vegetation.

Carbon sequestration: A large number of respondents said the government should support the role agriculture can play in sequestering carbon in soil and vegetation.

“Make the ACCU system less complex, costly and bureaucratic to encourage farmers to focus on practices that build soil carbon and revegetation.”

“Give natural capital a value that gives incentive to land owners to protect and improve it's biodiversity to maximise efficient carbon sink”

“We need ag tech to be able to accurately track carbon.”

3.

Enteric methane

A significant proportion of respondents also want support from the government to reduce methane emissions from livestock. Selective breeding, feed supplements, and regenerative agriculture practices were all mentioned as solutions.

“Fund research into reducing methane production by ruminants; then support adoption of the technology.”

“We need to look at plants we can grow that will naturally reduce enteric methane (rather than buy in asparagopsis), e.g. lucerne, plantain, chicory, and saltbush.”

“Incentivise farmers to use new technologies to reduce methane.”

56% of respondents said financial incentives like grants or tax breaks for farmers are viewed as the most practical solutions to increase the uptake of emission reduction technologies and methods on farm.

28% said tax incentives are the best way for the government to support agriculture to drive innovation in emissions reduction.

“Tax and financial incentives are proven to work in the farming space. Instant asset write off for capital investments that aid farmers to reduce emissions.”

“Tax incentives for multi-peril insurance products to create a viable commercial market for such products in Australia. This will allow growers to remove a portion of risk from their businesses and then invest with confidence in growing productivity and reducing emissions intensity.”

35% said the expansion of extension services to provide expert advice and support on the ground was the best investment the government could make to build the capacity of farmers

5% said the introduction of subsidies for carbon-friendly practices and technologies was the best way the government could enable emissions reduction in agriculture through systemic change.

88% of respondents overwhelmingly agree that the Australian Government should determine a consistent and trusted approach for assessing and reporting emissions.

“By getting these models right we empower farmers which will always be the most successful and rapid way to foster change. This should be priority one!!”

47% said if they can get straightforward guidelines for emissions assessment that is suitable for all farm types - it will support them to assess and report emissions.

58% While 58% said they need practical on-farm demonstrations of how to implement and use new practices and technologies.



A PULSE-CHECK ON RENEWABLES AND TRANSMISSION PROJECTS

Of the 46% of respondents who said there are large-scale renewables and transmission projects being developed or proposed in their region:



For respondents who believed their communities were opposed to large-scale renewables or transmission projects we asked what they thought would lead to more support:

- Many farmers highlighted the need for accurate information and communication on the rationale/need for renewable energy and transmission projects in proposed areas.
- Respondents stressed the need for better and earlier community consultation and community-wide benefits.
- Others stressed that opposition from landholders primarily occurs when projects/routes are proposed through productive agricultural land.

“We need to explore new transmission and generation projects that are required to operate on ag land with complete respect for the landholder first. What we see at the moment are transmission and generation companies driving a wedge between the farmers and the renewable solutions that our nation requires them to host.”

“Solar farms are great but don't build them on food-producing land - they should be built on marginal land that is unproductive for agriculture. This is so frustrating and stupid and that's why farmers end up listening to Sky News and wanting coal forever.”



CASE STUDY 1

Modelling success for on-farm emissions reduction

Who: Olivia Lawson

Where: Paringa Livestock, Yea, Victoria

What: Breeder of elite genetics for beef producers

“I think what would drive more uptake in farmers changing their practices and trying to reduce their emissions would be the rollout of more extension programs and a central portal where farmers can go and find information and grant opportunities.”

Olivia Lawson and her husband run Paringa Livestock, a breeder of elite genetics for Australian beef producers. The Lawsons are one of the first participants of the Victorian on-farm Emissions Action Plan Pilot, an emissions analysis and reduction program delivered by Agriculture Victoria. The program supports up to 250 farm businesses across Victoria to understand their on-farm emissions profile, develop an emissions reduction action plan, and implement the recommendations supported by a grant. The one-on-one, in-person engagement with technical experts from Agriculture Victoria throughout the program is helping Olivia to understand exactly what emissions are reducible on her property.

Olivia believes that the moral incentive to reduce emissions is clear and accepted by producers. But it is ultimately this type of grant incentive model which will help to bring along the ‘middle chunk’ of farmers who are ready for climate action but need some assurance that their participation will be financially worthwhile.

For Olivia, the accessibility and thoroughness of the technical experts reduces the experimentation risk typically associated with one-time grants and is empowering her to prioritise the solutions that are achievable on-farm now and into the future.



CASE STUDY 2

Balancing financial and environmental outcomes

Who: Iain and Kate Field

Where: Leap Farm and Tongola Cheese, Copping, Tasmania

What: Goat dairy, beef cattle, agri-tourism

“We need to support all farmers to improve and maintain healthy agricultural landscapes enabling ecosystem services, food and fibre production, and strong, vibrant rural communities.”

To maintain sustainability and market security, Iain and Kate Field from Leap Farm have built a strong community around their Tongola Cheese brand, supplying directly to the local market of their region. For Leap Farm, a key benefit of a short supply chain is that risks associated with food spoilage, freight, waste, and supply chain disruptions and uncertainties are largely avoided.

As a former lecturer in ecology, Iain has always had a passion for data collection and conducts his own carbon accounting on-farm with third-party verification. Although not formally certified, Leap Farm is carbon positive and sequesters three times as much carbon than it emits. The choice against becoming certified was informed by Leap Farm's close connection to their market negating the need to demonstrate his sustainability by certification.

Instead, Leap Farm welcomes customers on-farm to witness their practices first hand, and transparently shares their equations and calculations. The cost-neutrality of this choice also means that the savings can be spent on other operational practices and focussing on environmental and sustainability outcomes.

In addition to their current markets, Leap Farm and Tongola Cheese are diversifying into additional value-added by-products and becoming a destination product through agritourism. Bringing consumers to the source of their food is something that excites Iain when thinking about the future sustainability of Leap Farm. Iain is eager to see the industry reach higher standards through a careful balance of financial, environmental and social sustainability.



CASE STUDY 3

A carbon neutral winery in the Hunter Valley

Who: Alisdair Tulloch

Where: Keith Tulloch Wine, Hunter Valley, NSW

What: Viticulture

“If your product has a low carbon footprint, it also has a competitive advantage.”



Alisdair Tulloch is a fifth generation winemaker who runs Keith Tulloch Wines with his family. Their 20 hectare property includes 10 hectares of vineyards and was the first carbon neutral winery in the Hunter Valley.

With an understanding of climate change and its impact on viticulture, Alisdair worked out the farm's carbon footprint in 2017/18 to be 660 tonnes of CO2 equivalent. They then looked at where those carbon emissions were coming from and identified 145 tonnes were from electricity use. They were spending \$30,000 on electricity a year for processing, picking and harvesting, heavy machinery, and refrigeration.

In 2018, they spent \$100,000 to construct a 65kW solar array which met 72% of the farm's power needs and had a four-year payback. They saved \$25,000 a year and reduced their emissions by 100 tonnes of CO2 equivalent.

“We tried to electrify as many processes as possible,” says Alisdair. “We purchased a new refrigeration system which was more energy efficient and we tried to use more energy during daylight hours. If the sun is hitting your property, you may as well capture it and use it.”

“Electricity is one of the major assets you have on your farm. When the electricity goes out, you're pretty hamstrung. We have so much going on in the food processing side of our business, that if we lose electricity, our products could spoil within days or hours if we're within the vintage period.”

“Having a carbon neutral product that we sell direct to the public, we also noticed a strong increase in sales as customers look for more sustainable products.”



CASE STUDY 4

Cotton grower using solar to cut costs

Who: Anne and Ian Brimblecombe

Where: Burgorah, St George, Queensland

What: Cotton

“My dream is to run my whole operation with renewables.”

When water is available on Burgorah, Anne and Ian Brimblecombe grow and irrigate 320 hectares of cotton. Local network constraints, a non-competitive energy market, and unsuitable tariff schemes have meant Ian has had to install numerous metres and solar installations to keep energy for irrigation affordable.

They invested significantly in nine solar installations totalling approximately 344kW with an average payback of three to four years. Ian estimates he saves about \$60,000 a year because of his solar (\$30,000 income from feed in tariffs and \$30,000 savings on not buying electricity from the grid).

Ian says: “We know that burning fossil fuels is heating the planet and each of us has to stop that as quickly as we can and come up with other ways for getting power for what we need.”

“My dream is to run my whole operation with renewables as I only pump for one month a year so for the other 11 months, my solar is not doing anything. In that time, I’d like to be making hydrogen or ammonia and be using that ammonia to run tractors and as fertiliser. That is my goal.”

Ian’s operation is constrained by the inability to share solar energy between various pumps and other loads on his property, which is not permitted under current distribution network rules. He’s keen to see changes in some of the network rules around the sharing of energy on farms.



CASE STUDY 5

Building business resilience in the face of increasing climate impacts

Who: Jessica and Thomas Murray

Where: Trilby Pastoral, near Louth, far western NSW

What: Merino sheep and rangeland goats for meat and fibre production, carbon farming, agri-tourism

“Back your farmers. Australian Agriculture could be leading climate change action internationally. With climate-smart knowledge and government funded initiatives, farmers will lead the way to a better future.”

The Murray family have been pastoralists in the district for over 150 years. In the past seven years they have experienced a spectrum of extreme weather from unrelenting drought and dust storms to recent floods that surrounded their home and cut the station off for months.

This means the family are constantly responding to and preparing for extreme weather - with the impacts of climate change permeating into their short and long term decision making.

Jessica shares that in looking at the resilience of the farm business in the face of a changing climate has unearthed opportunities for involvement in the carbon market, sustainable practices and renewable energy investment have had positive impacts on the business, its diversification and survivability - taking steps to ensure the family business can be resilient to the changing climate.

“I find natural pasture management a really interesting climate-smart strategy as there is such a wealth of history and knowledge base to learn from.”

“Carbon farming has provided a diversified income that supports on-farm projects to respond to and prepare for drought. I see potential in this area for the data of our natural resource management to inform livestock management, improved overall production and sustainability metrics. I believe there will come a time when our carbon projects will be channelled towards neutralising our whole farm emissions, rather than generating income.”

Jessica also sees strong potential in the application of more renewable energy on the farm and at a larger scale.

“On a small scale we use solar bores. But I see a lot of potential in the application of more renewable energy on farm and at a larger scale. One local grazier has, in the past 4 years, invested in solar across his farm to reduce his whole farm electricity bill by 70% and generate an income from power going back into the grid. The barrier we face is being at the literal end of the power line for producing energy to go back into the grid – despite having ample space and resource.”



CASE STUDY 6

Hope in the face of a rapidly changing climate

Who: Caitlin McConnel

Where: Cressbrook Station, Toogoolawah, Queensland

What: Beef, agrivoltaics, agri-tourism

“Having grown up in the generation that was told ‘don’t be a farmer’, I am incredibly excited by the opportunities now available in the industry. The global pandemic and emerging awareness of climate change have really brought the attention back to agriculture as being a fundamental human need, and my hope is that consumers, businesses, and governments will continue to embrace the industry as a solution to long-term food security, and a key component of any plan to achieve net zero.”



Caitlin McConnel’s farm, Cressbrook Station, is the oldest identified family business in Queensland with a rich and affectionate inter-generational history with the Dungibara people since their time of settlement.

The day to day business of Cressbrook Station has changed significantly in the past 20-years, compared to previous generations. Because of the impacts of climate change.

“The greatest challenge on-farm and in our region is the viability of our agricultural pursuits due to the increased risks associated with climate change. Since 1990, we have endured weather systems not seen in previous generations – swinging radically from severe drought to catastrophic flood, with little periods of what were considered ‘normal’ seasons. 2022 was our second wettest year on record, whilst the summer of 2023 was one of our driest,” says Caitlin.

The family have moved from a commercial dairy and cropping operation to a small beef cattle operation, propped up by the income from renewable energy and off-farm income.

We’ve had to work smarter – and harder – to sustain our cattle numbers given increased instances of severe drought and flood, often with no ‘middle ground’ in seasons.”

As a legacy of the family’s inter-generational intensive dairy operation which ceased in 2006, the McConnel’s have continued to utilise cell-grazing practices for the purposes of maximising pasture growth and recovery, and soil health.

These management tools have enabled appropriate management of herd numbers during times of severe drought, whilst ensuring soil and pasture health are maintained. Since 2006, Cressbrook Station has been fertiliser, insecticide, and largely herbicide free, and as a result have seen remarkable results through the recovery of native and introduced grasses and return of birds and various beneficial insects.

Caitlin’s father was an early adopter of alternate energy sources, installing over 100kW of solar panels in 2010 for the purposes of generating power returnable to the main grid for income. Over the past few years, the family have installed additional solar panels on sheds, the main house and cottages, and have recently installed battery storage enabling the main house to go completely off the main grid. They have also installed a solar bore, with plans to install additional solar pumps at all other water sources. By limiting the use of ‘on-grid’ power, the McConnells ensure their diversified income (through solar rebates) remains viable, but also that reliance on traditional coal and gas fired electricity is kept at a minimum. The long-term aim is to become fully self-sustainable through solar power and battery storage.

The most recent change is an introduction of pastured chickens (layers) to the property to increase soil health and diversify income through enterprise stacking. “It is clear that our climate has changed significantly – and rapidly – and it is these experiences on-farm that make me acutely aware that the future success of agriculture in our region will come from the implementation of climate adaptation.”

“

SURVEY METHODOLOGY

NUMBER OF RESPONDENTS:

895

58% farmers (518)

17% members of the agriculture value chain (155)

4% retired farmers (35)

21% other (187) *Excluded from full survey

TIMING:

Farmers for Climate Action's Net Zero Sector Plan for Agriculture and Land survey opened on 15 November 2023 and closed on 26 November 2023.

The majority of questions linked directly to the Department of Agriculture, Fisheries and Forestry's discussion paper on a Net Zero Plan for Agriculture and Land.

OBJECTIVE:

To enable an accessible participation opportunity for farmers in a major government consultation process.

DISTRIBUTION:

Farmers for Climate Action's farmer network (8,000+)

Farmers for Climate Action's agricultural industry network (3,500+)

Organic social media reach: 17,750

Paid social media reach: 11,900

Media reach: 115, 281

The following organisations were approached directly by Farmers for Climate Action's CEO, Natalie Collard, with details on the survey and a request to share with members:

- Ag Zero 2030
- AgForce QLD
- AgriFutures Australia
- Almond Board of Australia
- Apple and Pear Australia Limited
- Australian Banana Growers' Council
- Australian Cane Growers' Council Ltd
- Australian Chicken Growers' Council
- Australian Dairy Farmers
- Australian Eggs Limited
- Australian Forest Products Association
- Australian Livestock & Property Agents Association
- Australian Livestock Export Corporation Limited (LiveCorp)
- Australian Livestock Exporters' Council

- Australian Mangoes
- Australian Meat Processor Corporation
- Australian Nut Industry Council
- Australian Organic Ltd
- Australian Pork Limited
- Australian Table Grape Association Inc
- Australian Veterinary Association
- Australian Wool Innovation Limited
- AusVeg
- Avocados Australia
- Beechworth Honey
- Berries Australia
- Bird Life
- Cattle Australia
- Citrus Australia
- Cotton Australia
- Cotton Research and Development Corporation
- Dairy Australia
- Dried Fruits Australia
- Fisheries Research and Development Corporation
- Forest and Wood Products Australia
- Goat Industry Council of Australia
- GrainGrowers
- Grains Research and Development Corporation
- Greenlife Industry Australia
- Horticulture Innovation Australia Limited
- Kangaroo Industry Association
- Meat and Livestock Australia
- Melons Australia
- National Farmers Federation
- Northern Territory Cattlemen's Association
- NSW Farmers
- NSW Irrigators' Council
- NT Farmers
- Primary Employers Tasmania
- Primary Producers SA
- Queensland Fruit & Vegetable Growers
- Ricegrowers' Association of Australia
- Sheep Producers Australia
- Soils for Life
- Sugar Research Australia
- Summerfruit Australia
- Tasmanian Farmers and Graziers Association
- Turf Australia
- vegetablesWA
- Victorian Farmers Federation
- WAFarmers
- Wine Australia
- WoolProducers Australia

FARMERS FOR CLIMATE ACTION SURVEY RESULTS

Full list of questions and responses*

*excluding open-ended

Preamble

In early November, the Australian Government released a discussion paper on their upcoming Net Zero Plan for Agriculture and Land, one of six sector based plans.

We know it's one of the busiest times of the year for farmers but it's crucial that farmer views are central to the Plan. That's why we've developed this survey to help you have your say.

Farmers for Climate Action believes your voices will be critical in ensuring the government's plan protects Australian farmers' ability to be profitable, productive and sustainable.

This survey will ask you to comment on various questions in the government's discussion paper.

The outcomes of the survey will be part of a publicly available Net Zero Sector Plan for Agriculture and Land Farmer Survey Report, produced by Farmers for Climate Action.

This survey will close on Sunday 26th November.

Before we go any further, we wanted to explain what "Net Zero" means.

Net Zero emissions is when there is an overall balance between greenhouse gas emissions produced and greenhouse gas emissions taken out of the atmosphere.

The science clearly states that we need to get as close as possible to 'real' zero and only rely on carbon offsetting when it is absolutely necessary.

Which best describes you?

I'm a farmer or grazier	518 resp	57.9%
I work in the agriculture industry / I am member of the agriculture value chain	155 resp.	17.3%
I'm a retired farmer or grazier	35 resp.	3.9%
Other*	187	20.9%

*Excluded from remaining survey

If 'I'm a farmer or grazier or retired farmer/grazier'

We'd like to know a bit about your farm and experiences as a farmer.

The next few questions will focus on this.

Which of the following do you produce on your farm? Choose as many as you like

Beef	333 resp.	60.3%
Sheepmeat	180 resp.	32.6%
Wool	138 resp.	25%
Grains	107 resp.	19.4%
Horticulture	79 resp.	14.3%
Mixed farming	70 resp.	12.7%
Other – livestock	35 resp.	6.3%
Oilseeds	34 resp.	6.2%
Dairy	32 resp.	5.8%
Forestry	30 resp.	5.4%
Other – non -livestock	30 resp.	5.4%
Cotton	15 resp.	2.7%
Poultry	14 resp.	2.5%
Wine	14 resp.	2.5%
Aquaculture or seafood	8 resp.	1.4%
Carbon farming	6 resp.	1.1%
Conservation	5 resp.	1%
Rice	3 resp.	0.5%
Honey / bees	3 resp.	0.5%
Fodder	3 resp.	0.5%
Sugar	1 resp.	0.2%
Other	7 resp.	1.3%

If 'I'm a farmer or grazier or retired farmer/grazier'

Which of the following have you experienced on your farm in the past three years?

Choose as many as you like

Unusual rainfall	356 resp.	64.3%
Unpredictable growing seasons	296 resp.	53.4%
Storms	283 resp.	51.1%
Flooding	262 resp.	47.3%
Drought	217 resp.	39.2%
Heatwaves	164 resp.	29.6%
Increase in pests and diseases	120 resp.	21.7%
Bushfires	102 resp.	18.4%
None of the above	45 resp.	8.1%

If 'I'm a farmer or grazier or retired farmer/grazier'

You said you experienced [depending on response to previous question] in the past three years on your farm. How would you describe these events?

Somewhat unusual	313 resp.	61.7%
Very unusual	136 resp.	26.8%
Not at all unusual	58 resp.	11.4%

If 'I'm a farmer or grazier or retired farmer/grazier'

Have you invested in emissions reduction measures on your farm?

Yes	393 resp.	70.9%
No	161 resp.	29.1%

If 'I'm a farmer or grazier or retired farmer/grazier'

Do you have plans to invest in future or additional emissions reduction measures on your farm in the next five years?

Yes	353 resp.	63.7%
No	201 resp.	36.3%

If 'I'm a farmer or grazier or retired farmer/grazier'

What barriers do you face to reducing emissions and building carbon stores on your farm?

Choose as many as you like

Absence of clear government policies or incentives for sustainable practices.	323 resp.	59.5%
High upfront costs and limited access to capital for investing in new technology.	304 resp.	56%
Challenges in measuring and validating changes in emissions or carbon capture.	295 resp.	54.3%
Paperwork, bureaucracy, and government regulation	205 resp.	37.8%
Time constraints and the extra labour needed to apply new methods.	183 resp.	33.7%
Uncertainty about the effectiveness and dependability of new practices.	165 resp.	30.4%
Market barriers or insufficient demand for low-emission products.	163 resp.	30%
Lack of knowledge or training in sustainable farming methods and technology.	134 resp.	24.7%
Remote location challenges or inadequate infrastructure for accessing tech.	66 resp.	12.2%
Perceived risks linked to altering established farming practices.	65 resp.	12%
Other	69 resp.	12.7%

If answering 'I work in the agriculture industry / I am member of the agriculture value chain'

How would you describe your relationship with the agriculture value chain?

Commercial	83 resp.	58.9%
NFP	24 resp.	17%
Statutory or government body	13 resp.	9.2%
Peak Body	6 resp.	4.3%
Other	27 resp.	19.1%

What do you think is the single greatest threat to the future of farming in Australia?

Please choose one option.

Climate change	387 resp.	55.2%
Increasing bureaucracy and red tape	104 resp.	14.8%
Water security	60 resp.	8.6%
Increasing costs of insurance, fertiliser and other farm expenses	56 resp.	8%
Access to international markets	12 resp.	1.7%
The rollout of renewables	10 resp.	1.4%
Bushfires	8 resp.	1.1%
Transmission lines	7 resp.	1%
Floods	0 resp.	0%
Other	57 resp.	8.1%

Right now the Australian Government is writing a Net Zero Plan for Agriculture and Land and we want them to know what is important to you.

Which of the following should be prioritised by the government when it drafts the Net Zero Plan for Agriculture and Land?

You can choose up to 3

A healthy planet for next generations	369 resp.	52.9%
Climate adaptation support to farmers	360 resp.	51.6%
Farm business sustainability	338 resp.	48.4%
Land stewardship	277 resp.	39.7%
Innovation and extension	156 resp.	22.3%
Profitability	130 resp.	18.6%
Productivity	87 resp.	12.5%
Animal welfare	68 resp.	9.7%
Market access	47 resp.	6.7%
Consumer sentiment	23 resp.	3.3%
Other	55 resp.	7.9%

What do you think will be the most difficult in pursuing Net Zero emissions in agriculture?

Financial restrictions to implement emissions reduction strategies on farm	332 resp.	47.6%
Lack of knowledge, expertise or trusted advice to implement emissions reduction strategies on farm.	330 resp.	47.3%
Lack of industry leadership and support	233 resp.	33.4%
Consumers and markets need to force the change, the onus shouldn't be on farmers	187 resp.	26.8%
The scale of the situation is too big, we're running out of time to make the emissions reduction impact we need	175 resp.	25.1%
The technology and innovation doesn't exist to make the changes on the scale that is needed	161 resp.	23.1%
Time restrictions to implement emissions reduction strategies on farm	89 resp.	12.8%
The urgency to reduce emissions is overstated	43 resp.	6.2%
Other	122 resp.	17.5%

What do you think are the greatest opportunities for agriculture in pursuing Net Zero emissions?

You can choose up to 3

Reducing future climate risks	358 resp.	51.7%
Ensuring more certainty for future farming generations	344 resp.	49.7%
Preparing us to compete in global markets	193 resp.	27.9%
Pride in knowing agriculture is playing a key role in the shift to net zero	183 resp.	26.4%
Disaster resilience	167 resp.	24.1%
Energy independence	156 resp.	22.5%
Reduced inputs	117 resp.	16.9%
Increased profitability	116 resp.	16.8%
Reduced costs	67 resp.	9.7%
Market stability	36 resp.	5.2%
Other	70 resp.	10.1%

What do you think are the best ways to reduce emissions and build carbon stores on farm?

Choose as many as you like

Promoting biodiversity with mixed-species pastures and agroforestry systems.	453 resp.	65.4%
Rehabilitating degraded land and reforesting areas not suited for agriculture.	415 resp.	59.9%
Implementing rotational grazing to enhance pasture health and carbon uptake.	398 resp.	57.4%
Switching to renewable energy sources, like solar and wind, for farming operations.	369 resp.	53.2%
Adopting no-tillage methods to boost carbon sequestration in the soil.	317 resp.	45.7%
Improving livestock management efficiency to lower methane emissions.	307 resp.	44.3%
Investing in research for climate-resilient crops and farming methods.	285 resp.	41.1%
Using precision agriculture technologies to optimise inputs and reduce wastage.	280 resp.	40.4%
Shifting to organic farming practices that focus on soil health.	241 resp.	34.8%
Better handling of manure and composting to cut down nitrous oxide emissions.	196 resp.	28.3%
Other	119 resp.	17.2%

Thinking about your farm or agricultural business, which of the below tactics do you think would help you reduce emissions, while building resilience and adapting to climate change?

Choose as many as you like

Enhancing soil carbon sequestration.	499 resp.	72%
Using renewable energy sources on farms.	423 resp.	61%
Practising agroforestry and mixed farming	300 resp.	43.3%
Engaging in community knowledge-sharing initiatives.	285 resp.	41.1%
Utilising government-led incentive programs.	269 resp.	38.8%
Developing climate-resilient crop varieties.	217 resp.	31.3%
Adopting water-saving irrigation technologies.	207 resp.	29.9%
Implementing integrated pest management.	190 resp.	27.4%
Implementing diversified cropping systems.	187 resp.	27%
Investing in weather forecasting tools.	121 resp.	17.5%
Other	97 resp.	14%

What are the most practical solutions to increase uptake of emissions reduction technologies and methods on farm?

You can choose up to 3

Financial incentives, like grants or tax breaks, for farmers who adopt low-emission technologies or methods.	385 resp.	56.4%
Research and development support to enhance the practicability and profitability of sustainable farming.	245 resp.	35.9%
Extension services that offer tailored advice and support to farmers in adopting new methods and technology that reduce emissions.	242 resp.	35.4%
Education programs to improve farmers' knowledge of sustainable practices and their benefits.	210 resp.	30.7%
Development of a marketplace for carbon credits, rewarding farmers for carbon sequestration.	191 resp.	28%
Community-based projects to demonstrate the effectiveness of new practices on local farms.	162 resp.	23.7%
Government or industry-led initiatives to provide reliable access to renewable energy resources.	133 resp.	19.5%
Streamlined regulations and guidance to ease the implementation of sustainable practices.	132 resp.	19.3%
Collaboration platforms for farmers to share experiences, techniques, and success stories.	130 resp.	19%
Partnerships with technology providers for accessible pricing and support.	68 resp.	10%

We're now going to ask you three questions about supporting you with innovation, capacity building and systemic change.

How can the Australian Government best support agriculture to drive innovation?

You can only choose one option

Offer tax incentives for farms implementing new technologies.	195 resp.	28.1%
Increase funding for agricultural research and development.	158 resp.	22.7%
Support the creation and use of new sustainable farming equipment and methods.	135 resp.	19.4%
Provide grants for small-scale experimental farming practices.	118 resp.	17%
Establish innovation hubs for knowledge sharing and collaboration.	89 resp.	12.8%

How can the Australian Government best support agriculture to build the capacity of farmers?

You can only choose one option

Expand extension services to provide expert advice and support on the ground.	241 resp.	35.4%
Invest in infrastructure improvements, like transport and digital connectivity.	138 resp.	20.3%
Deliver more extensive training and education programs for farmers.	116 resp.	17%
Facilitate easier access to finance for farm expansion and modernization.	103 resp.	15.1%
Initiate mentorship and partnership programs with experienced agronomists and business leaders.	83 resp.	12.2%

How can the Australian Government best enable emissions reduction in agriculture through systemic change?

You can only choose one option

Introduce subsidies for carbon-friendly practices and technologies.	167 resp.	24.8%
Develop clear guidelines and support systems for carbon accounting on farms.	138 resp.	20.5%
Create rules that reward carbon reduction and penalise excess emissions.	133 resp.	19.8%
Set up a national carbon trading scheme that includes agriculture and land use.	123 resp.	18.3%
Coordinate with industry groups to set achievable, sector-specific emissions targets.	112 resp.	16.6%

A consistent and trusted approach for assessing and reporting emissions is often raised as a barrier to reducing emissions.

Is there a role for the Australian Government in addressing this concern?

Yes	601 resp.	87.9%
No	83 resp.	12.1%

How can you be supported to assess and report emissions? You can choose up to 3

Create straightforward guidelines for emissions assessment, suitable for all types of farms.	324 resp.	47.2%
Develop an easy-to-use, centralised online platform for reporting emissions data.	210 resp.	30.6%
Financial incentives for consistent and accurate emissions reporting.	173 resp.	25.2%
Recognise and reward producers who are diligent in monitoring and reporting emissions.	153 resp.	22.3%
Provide ongoing technical support and consultancy for managing emissions.	152 resp.	22.1%
Subsidised emission measurement and recording tool/s for farms.	151 resp.	22%
Training workshops on utilising emissions assessment tools efficiently.	123 resp.	17.9%
Enable integration with farm management software to make reporting emissions more streamlined.	120 resp.	17.5%
Seminars and workshops to educate about current emissions assessment methods.	106 resp.	15.4%
Facilitate community groups for sharing best practices in emissions reporting.	88 resp.	12.8%
No support is needed	32 resp.	4.7%
Other	60 resp.	8.7%

What skills, knowledge and capabilities do you need to reduce emissions on farm or in the agricultural industry? Choose as many as you like

Practical on-farm demonstrations of how to implement and use new practices and technology	391 resp.	57.8%
Understanding of sustainable agriculture practices and principles.	327 resp.	48.4%
Technical skills for operating emissions measurement and reduction technologies.	278 resp.	41.1%
Ability to analyse and interpret environmental data to inform farming practices.	276 resp.	40.8%
Proficiency in new technologies that support precision agriculture and resource management.	198 resp.	29.3%
Knowledge of local and global environmental regulations and standards.	170 resp.	25.1%
Financial management skills to effectively budget for sustainable transitions.	164 resp.	24.3%
Skills in communication to advocate for and educate about sustainable practices.	145 resp.	21.4%
Leadership and project management skills to drive change initiatives.	143 resp.	21.2%
Other	64 resp.	9.5%

What information and data would help you to make decisions about emissions reductions and sustainable land management in the short and longer term?

Choose as many as you like

Detailed guidelines on the most effective emissions reduction techniques.	371 resp.	55.4%
Research findings on the long-term impacts of various land management practices.	349 resp.	52.1%
Information on government subsidies and funding for sustainable projects.	337 resp.	50.3%
Case studies and success stories of sustainable practices in similar agro-climatic zones.	336 resp.	50.1%
Updates on advancements in sustainable technology and methods.	296 resp.	44.2%
Easy to understand guides on carbon credit projects and how to run them.	286 resp.	42.7%
Tools for modelling financial outcomes of transitions to sustainable practices.	230 resp.	34.3%
Data on carbon markets and how to participate in them.	203 resp.	30.3%
Access to real-time data on weather patterns and climate change projections.	186 resp.	27.8%
Other	45 resp.	6.7%

Are there large-scale renewables and transmission projects being developed or proposed in your region?

If you're unsure, select no

Yes	324 resp.	45.7%
No	385 resp.	54.3%

If answering yes to the above

How does your community feel about these large-scale renewables and transmission projects?

You can only choose one option

Somewhat Supportive	95 resp.	29.2%
Somewhat Opposed	82 resp.	25.2%
Very Opposed	52 resp.	16%
Very Supportive	37 resp.	11.4%
Indifferent	33 resp.	10.2%
Don't know	26 resp.	8%





farmers for climate action

Farmers for Climate Action is a movement of farmers, agricultural leaders and rural Australians working to influence Australia to adopt strong climate policies by growing the number of farmers, regional communities and elected representatives championing ambitious action. We connect farmers with each other and support them to advocate for climate solutions both on and off farm. We are independent, non-profit and non-partisan.

We represent more than 8,000 farmers across Australia, and our supporter base includes over 45,000 Australians committed to climate action for agriculture.

A Survey of Australian Agricultural Perspectives on a Path to Net Zero

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